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=> fil reg
FILE 'REGISTRY' ENTERED AT 13:35:58 ON 06 AUG 2008
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STRUCTURE FILE UPDATES:    5 AUG 2008  HIGHEST RN 1038926-51-0
DICTIONARY FILE UPDATES:   5 AUG 2008  HIGHEST RN 1038926-51-0

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TSCA INFORMATION NOW CURRENT THROUGH January 9, 2008.

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REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> d que stat l6
L4              STR

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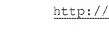

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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   4

STEREO ATTRIBUTES: NONE
L6        33641 SEA FILE=REGISTRY SSS FUL L4

100.0% PROCESSED  539650 ITERATIONS                      33641 ANSWERS
SEARCH TIME: 00.00.04


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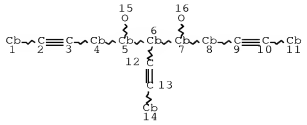

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GRAPH ATTRIBUTES:
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STEREO ATTRIBUTES: NONE


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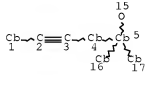

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DEFAULT ECLEVEL IS LIMITED
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   8

STEREO ATTRIBUTES: NONE


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                E US20070027278/PN
L1             1 S E3
                SEL RN

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L2            22 S E1-22
L3             1 S L2 AND C121H80O21/MF

     FILE 'LREGISTRY' ENTERED AT 13:10:12 ON 06 AUG 2008
L4               STR

     FILE 'REGISTRY' ENTERED AT 13:11:13 ON 06 AUG 2008
L5            50 S L4
L6         33641 S L4 FUL
L7             3 S L2 AND L6

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L8               STR L4

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L9             1 S L8 SSS SAM SUB=L6

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L10              STR L8

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L12              STR L10

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L19           2 S L2 AND L18
L20          44 S L18 NOT L14
                SAV L18 WIN992S2/A

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L21           2 S L14
L22          17 S L20

     FILE 'CAOLD' ENTERED AT 13:32:15 ON 06 AUG 2008
L23           0 S L14
L24           0 S L20

     FILE 'STNGUIDE' ENTERED AT 13:33:10 ON 06 AUG 2008

     FILE 'HCAPLUS' ENTERED AT 13:34:37 ON 06 AUG 2008
L25           2 S L21 AND L22
L26          15 S L22 NOT L25


=> fil hcap
FILE 'HCAPLUS' ENTERED AT 13:36:31 ON 06 AUG 2008
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FILE COVERS 1907 - 6 Aug 2008  VOL 149 ISS 6
FILE LAST UPDATED: 5 Aug 2008  (20080805/ED)

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2008.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d l25 ibib abs hitstr hitind 1-2

L25  ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         2004:219870  HCAPLUS  Full-text
DOCUMENT NUMBER:          140:271405
TITLE:                    Multifunctional monomers and their use in making
                          crosslinked polymers and porous films
INVENTOR(S):              Niu, Q. Jason; Hefner, Robert E.; Godschalx,
                          James P.; Pechacek, James T.; Arndt, Kim E.
PATENT ASSIGNEE(S):       USA
SOURCE:                   U.S. Pat. Appl. Publ., 54 pp., Cont.-in-part of
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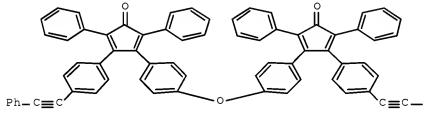
U.S. Ser. No. 78,205, abandoned.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040053033	A1	20040318	US 2003-365938	200302 12
CN 1646463	A	20050727	CN 2003-808460	200302 12
PRIORITY APPLN. INFO.:			US 2002-78205 B2	200202 15

OTHER SOURCE(S): MARPAT 140:271405
GI



I

AB This invention is a monomer comprising at least two dienophile groups and at least two ring structures, of which ring structures are characterized by the presence of two conjugated carbon-to-carbon double bonds and the presence of a leaving group L, wherein L is characterized in that when the ring structure reacts with a dienophile in the presence of heat or other energy sources, L is removed to form an aromatic ring structure. This invention is also curable oligomers and polymers and highly crosslinked polymers made with such monomers. Moreover, this invention is a method of making porous films by combining such monomers or their oligomers with a porogen, curing the polymer and removing the porogen. A typical monomer I was manufactured by chlorination of 4-bromophenylacetic acid, reaction of the resulting acetyl chloride with Ph2O, oxidation of the resulting 4,4'-bis[(4-bromophenyl)acetyl] ether with HBr, reaction of the resulting 4,4'-bis[(4-bromophenyl)glyoxalyl] ether with phenylacetylene, and reaction of the resulting 4,4'-bis[[4-(phenylethynyl)phenyl]glyoxalyl] ether with 1,3-diphenylacetone.

IT 582323-72-6P 671780-35-1P 671780-39-5P
RL: IMF (Industrial manufacture); PREP (Preparation)
(multifunctional aromatic acetylene monomers for manufacture of crosslinked polymers and porous films)

RN 582323-72-6 HCAPLUS

CN 2,4-Cyclopentadien-1-one, 3,3'-[5-(phenylethynyl)-1,3-phenylene]bis[2,5-diphenyl-4-[4-(phenylethynyl)phenyl]-, homopolymer (9CI) (CA INDEX NAME)

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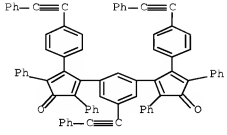
CRN 582323-51-1
CMF C76 H46 O2



RN 671780-35-1 HCAPLUS
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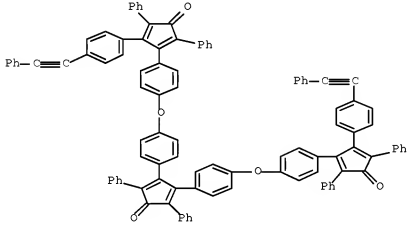

RN 671780-39-5 HCAPLUS
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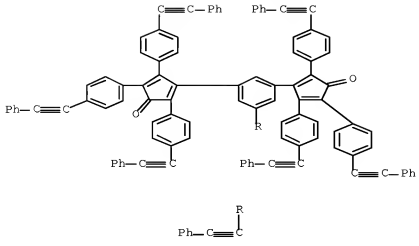

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671780-29-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(multifunctional aromatic acetylene monomers for manufacture of crosslinked polymers and porous films)

RN 406721-21-9 HCAPLUS

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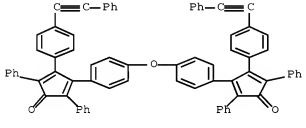

RN 582323-26-0 HCAPLUS

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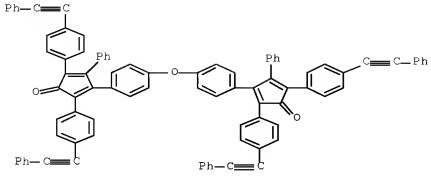

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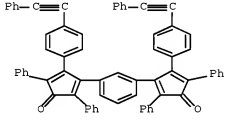

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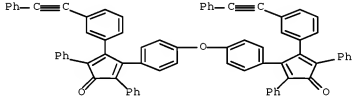

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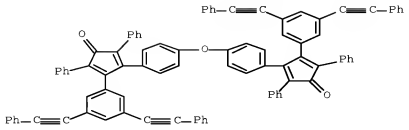

RN 582323-51-1 HCAPLUS
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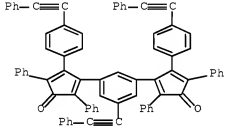

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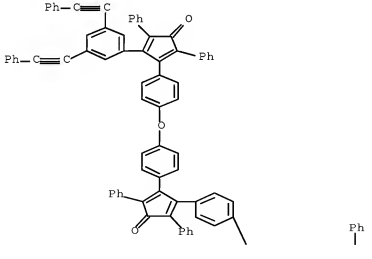
PAGE 1-A



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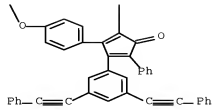

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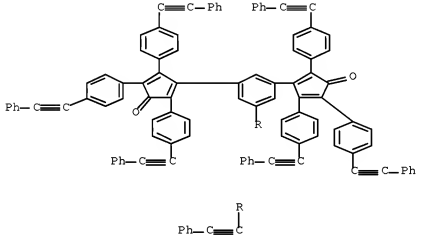
CN 2,4-Cyclopentadien-1-one, 3,3'-[5-(phenylethynyl)-1,3-phenylene]bis[2,4,5-tris[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



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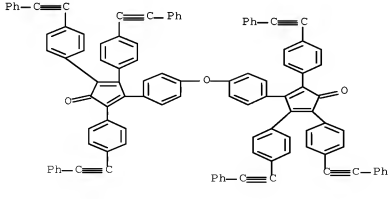

RN 671780-29-3 HCAPLUS
CN 4,7:9,12:16,19:21,24-Tetraetheno-1H-dicyclopent[f,q]oxacyclodocosin-1,15(20H)-dione, 2,3,13,14-tetraphenyl-20,20-bis(phenylethynyl)-,

mixt. with 3-[4-[4-[3-oxo-2,5-diphenyl-4-[4-(phenylethynyl)phenyl]-1,4-cyclopentadien-1-yl]phenoxy]phenyl]-4,5-diphenyl-2-[4-(phenylethynyl)phenyl]-2,4-cyclopentadien-1-one and 3,3'-(oxydi-4,1-phenylene)bis[2,4-diphenyl-5-[4-(phenylethynyl)phenyl]-2,4-cyclopentadien-1-one] (9CI) (CA INDEX NAME)

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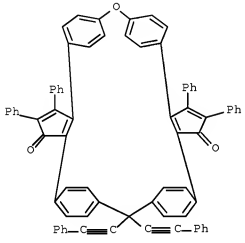

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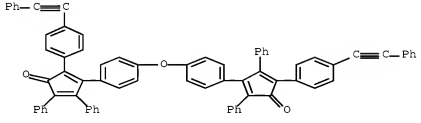

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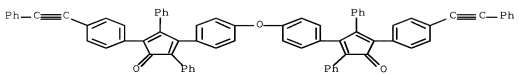

IC ICM B32B003-26
INCL 428304400
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 25, 37
IT 582323-31-7P 582323-33-9P 582323-67-9P 582323-70-4P
582323-72-6P 582323-75-9P 671780-34-0P
671780-35-1P 671780-36-2P 671780-37-3P 671780-38-4P
671780-39-5P 672287-67-1P
RL: IMF (Industrial manufacture); PREP (Preparation)
(multifunctional aromatic acetylene monomers for manufacture of crosslinked polymers and porous films)
IT 406721-21-9P 582323-26-0P 582323-30-6P
582323-37-3P 582323-43-1P 582323-51-1P
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582323-78-2P 671780-29-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(multifunctional aromatic acetylene monomers for manufacture of crosslinked polymers and porous films)

L25 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:656812 HCAPLUS Full-text
DOCUMENT NUMBER: 139:197922
TITLE: Multifunctional monomers and their use in making crosslinked polymers and porous films for use in semiconductors
INVENTOR(S): Niu, Qing Shan J.; Hefner, Robert E., Jr.; Godschalx, James P.
PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA; Pechacek, James T.; Arndt, Kim E.
SOURCE: PCT Int. Appl., 108 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003068825	A2	20030821	WO 2003-US4221	200302 12
WO 2003068825	A3	20031204		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,

EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003215182 A1 20030904 AU 2003-215182 200302 12

EP 1476416 A2 20041117 EP 2003-710996 200302 12

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JP 2005517745 T 20050616 JP 2003-567951 200302 12

CN 1646463 A 20050727 CN 2003-808460 200302 12

PRIORITY APPLN. INFO.: US 2002-78205 A 200202 15

WO 2003-US4221 W 200302 12

OTHER SOURCE(S): MARPAT 139:197922

AB This invention is a monomer comprising at least two dienophile groups and at least two ring structures which ring structures are characterized by the presence of two conjugated carbon-to-carbon double bonds and the presence of a leaving group L, wherein L is characterized that when the ring structure reacts with a dienophile in the presence of heat or other energy sources, L is removed to form an aromatic ring structure. This invention is also curable oligomers and polymers and highly crosslinked polymers made with such monomers. Moreover, this invention is a method of making porous films by combining such monomers or their oligomers with a porogen, curing the polymer and removing the porogen. 3,3'-(Oxy-di-1,4-phenylene)-4,4'-bis[4-phenylethynylphenyl]-2,5- diphenylcyclopentadienone was prepared and cured to a polymer.

IT 582323-72-6P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)

(multifunctional monomers and their use in making crosslinked polymers and porous films for use in semiconductors)

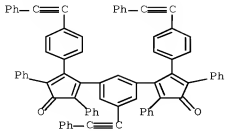
RN 582323-72-6 HCAPLUS

CN 2,4-Cyclopentadien-1-one, 3,3'-[5-(phenylethynyl)-1,3-phenylene]bis[2,5-diphenyl-4-[4-(phenylethynyl)phenyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

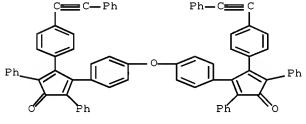
CRN 582323-51-1

CMF C76 H46 O2

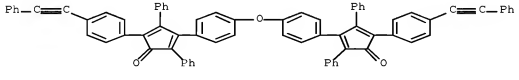


IT 406721-21-9P 582323-22-6P 582323-23-7P
582323-24-8P 582323-26-0P 582323-30-6P
582323-37-3P 582323-43-1P 582323-51-1P
582323-53-3P 582323-55-5P 582323-69-1P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(multifunctional monomers and their use in making crosslinked polymers and porous films for use in semiconductors)

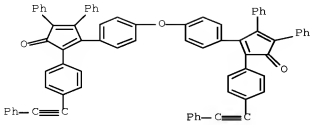
RN 406721-21-9 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,5-diphenyl-4-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



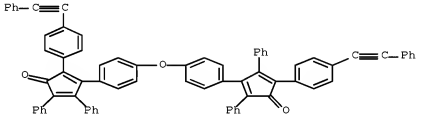
RN 582323-22-6 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4-diphenyl-5-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



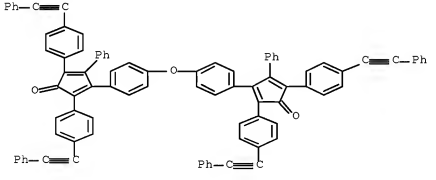
RN 582323-23-7 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[4,5-diphenyl-2-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



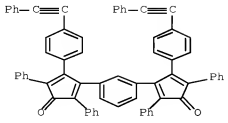
RN 582323-24-8 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3-[4-[4-[3-oxo-2,5-diphenyl-4-[4-(phenylethynyl)phenyl]-1,4-cyclopentadien-1-yl]phenoxy]phenyl]-4,5-diphenyl-2-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



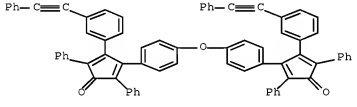
RN 582323-26-0 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[4-phenyl-2,5-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



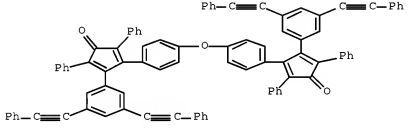
RN 582323-30-6 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(1,3-phenylene)bis[2,5-diphenyl-4-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



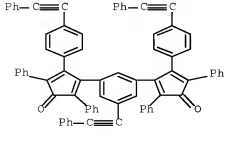
RN 582323-37-3 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,5-diphenyl-4-[3-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



RN 582323-43-1 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,5-diphenyl-4-[3,5-bis(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)

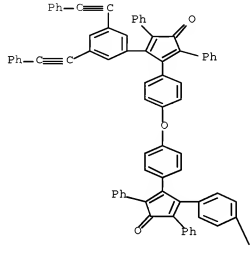


RN 582323-51-1 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-[5-(phenylethynyl)-1,3-phenylene]bis[2,5-diphenyl-4-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)

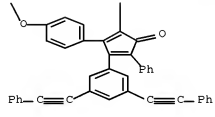


RN 582323-53-3 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,4-bis[4-[4-[5-[3,5-bis(phenylethynyl)phenyl]-3-oxo-2,4-diphenyl-1,4-cyclopentadien-1-yl]phenoxy]phenyl]-2,5-diphenyl- (9CI) (CA INDEX NAME)

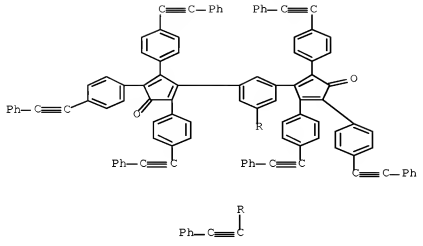
PAGE 1-A



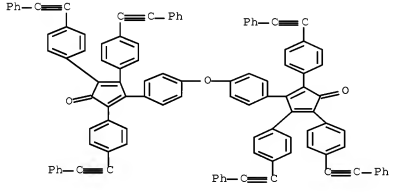
PAGE 2-A



RN 582323-55-5 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-[5-(phenylethynyl)-1,3-phenylene]bis[2,4,5-tris[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



RN 582323-69-1 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-tris[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)

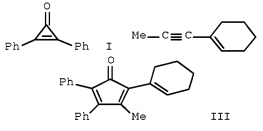


IC ICM C08F
CC 35-3 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 76
IT 582323-67-9P 582323-70-4P 582323-72-6P 582323-75-9P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)
(multifunctional monomers and their use in making crosslinked polymers and porous films for use in semiconductors)
IT 14062-25-0P, ETHYL 4-BROMOPHENYLACETATE 37859-24-8P, 4-BROMOPHENYLACETYL CHLORIDE 52584-23-3P, 1,3-PHENYLENEDIACETYL CHLORIDE 53831-51-9P 54523-47-6P, 1,3-BIS(4-BROMOPHENYL)-2-PROPANONE 64180-18-3P 65636-25-1P 78302-97-3P 90016-25-4P 98288-51-8P, 3-BROMOPHENYLACETYL CHLORIDE 406721-21-9P
582323-20-4P 582323-21-5P 582323-22-6P
582323-23-7P 582323-24-8P 582323-25-9P
582323-26-0P 582323-27-1P 582323-29-3P
582323-30-6P 582323-34-0P 582323-35-1P 582323-36-2P
582323-37-3P 582323-38-4P 582323-39-5P 582323-40-8P
582323-41-9P 582323-42-0P 582323-43-1P 582323-44-2P
582323-47-5P 582323-49-7P 582323-51-1P

582323-53-3P 582323-55-5P 582323-60-2P
582323-62-4P 582323-64-6P 582323-69-1P 582323-78-2P
582323-81-7P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(multifunctional monomers and their use in making crosslinked polymers and porous films for use in semiconductors)

=> d l26 ibib abs hitstr hitind 1-15

L26 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1246887 HCAPLUS Full-text
DOCUMENT NUMBER: 146:142295
TITLE: Cyclopentadienone Synthesis by Rhodium(I)-Catalyzed [3+2] Cycloaddition Reactions of Cyclopropenones and Alkynes
AUTHOR(S): Wender, Paul A.; Paxton, Thomas J.; Williams, Travis J.
CORPORATE SOURCE: Departments of Chemistry and of Molecular Pharmacology, Stanford University, Stanford, CA, 94305-5080, USA
SOURCE: Journal of the American Chemical Society (2006), 128(46), 14814-14815
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 146:142295
GI

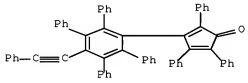


AB The Rh(I)-catalyzed [3+2] cycloaddn. of cyclopropenones and alkynes provides a highly efficient and regiocontrolled route to cyclopentadienones (CPDs), building blocks of widespread use in the synthesis of natural and non-natural products, therapeutic leads, polymers, dendrimers, devices, and antigen presenting scaffolds. The versatility of the method is explored with 23 examples representing a wide range of alkyne variations (arylalkyl-, dialkyl-, heteroarylalkyl-) and diaryl- as well as arylalkylcyclopropenones. Thus, reaction of the diphenylcyclopropenone I with the cyclohexenylpropyne II in toluene containing [RhCl(CO)2]2 at 80° for 3 h gave 88% cyclohexenylcyclopentadienone III. The reactions often proceed in high yield using minimal catalyst loadings and in all cases examined proceed with high or complete regioselectivity. The reaction is readily scalable to produce gram quantities of cycloadduct and provides a unique and versatile route to CPDs that would be otherwise difficult to obtain.
IT 919036-97-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure triphenylcyclopentadienone derivative prepared by Rh complex-catalyzed cycloaddn. of cyclopropenone with diphenylbutadiene)

RN 919096-97-2 HCAPLUS

CN 2,4-Cyclopentadien-1-one, 3-[4',5'-diphenyl-6'-(2-phenylethynyl)[1,1':2',1''-terphenyl]-3'-yl]-2,4,5-triphenyl- (CA INDEX NAME)



CC 24-4 (Alicyclic Compounds)

IT 919096-97-2P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure triphenylcyclopentadienone derivative prepared by Rh complex-catalyzed cycloaddn. of cyclopropenone with diphenylbutadiene)

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:1212689 HCAPLUS Full-text

DOCUMENT NUMBER: 146:122329

TITLE: Novel branched polyphenylenes based on A2/B3 and AB2/AB monomers via Diels-Alder cycloaddition

AUTHOR(S): Stumpe, Katrin; Komber, Hartmut; Voit, Brigitte I.

CORPORATE SOURCE: Leibniz Institute of Polymer Research Dresden e.V., Dresden, 01069, Germany

SOURCE: Macromolecular Chemistry and Physics (2006), 207(20), 1825-1833
CODEN: MCHPES; ISSN: 1022-1352

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

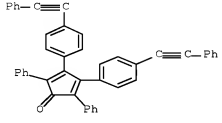
LANGUAGE: English

AB Novel hyperbranched polyphenylenes based on both an A2 + B3 and an AB2 + AB approach were synthesized and characterized. Different monomers were prepared and polymerized using a Diels-Alder reaction with subsequent decarbonylation. The polymer backbones consist of hexaphenylbenzene units which are linked in different positions and functionalized by cyclopentadienone (A) and/or alkyne groups (B) depending on the monomer ratio. The structure and properties of the resulting polymers were compared to those of hyperbranched polyphenylenes based solely on an AB2 monomer. All branched products showed high thermal stability and good solubility in common organic solvents such as chloroform or toluene. However, due to steric hindrance, the polyphenylenes produced using the A2 + B3 approach exhibited a high percentage of linear units within the polymer structure.

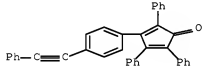
IT 193251-05-3P 204526-88-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(novel branched polyphenylenes based on A2/B3 and AB2/AB monomers via Diels-Alder cycloaddn.)

RN 198291-05-3 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-diphenyl-3,4-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 204520-88-7 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,3,5-triphenyl-4-[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



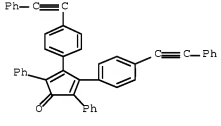
CC 35-2 (Chemistry of Synthetic High Polymers)
IT 1605-19-2P, 1,4-Bis(phenylethenyl)benzene 1849-27-0P, 1,4-Bis(phenylethynyl)benzene 3363-97-1P 3432-73-3P 70734-74-6P 118688-56-5P, 1,3,5-Tris(phenylethynyl)benzene 198291-05-3P 204520-88-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(novel branched polyphenylenes based on A2/B3 and AB2/AB monomers via Diels-Alder cycloaddn.)
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1212688 HCAPLUS Full-text
DOCUMENT NUMBER: 146:122668
TITLE: NMR study of hyperbranched polyphenylenes from the AB2, (AB2 + AB) and (A2 + B3) methods
AUTHOR(S): Komber, Hartmut; Stumpe, Katrin; Voit, Brigitte
CORPORATE SOURCE: Leibniz-Institute of Polymer Research Dresden, Dresden, 01069, Germany
SOURCE: Macromolecular Chemistry and Physics (2006), 207(20), 1814-1824
CODEN: MCHPES; ISSN: 1022-1352
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English

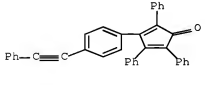
AB The 1H NMR and 13C NMR spectra of hyperbranched polyphenylenes synthesized from AB2, (AB2 + AB) and (A2 + B3) monomers (A: ethynyl group; B: cyclopentadienonyl group) were analyzed with respect to the characteristic substructures of these polymers. The broad and overlapping NMR spectra were studied by a combination of 1D and 2D NMR techniques. Appropriate model compds. were synthesized, and their 1H and 13C NMR spectra were fully assigned. The signal assignments achieved allow to substantiate the different hyperbranched polyphenylene structures. Steric hindrance in densely packed di- and trihexaarylphenyl substituted units of the (A2 + B3) polyphenylenes results in a decrease of the rotation frequency of Ph rings in these structures to such an extent that the motion is slow on the 1H NMR time scale. This can be proved both by EXSY and variable-temperature expts. Steric constraints were also deduced for the AB2 polyphenylenes from signal line shape.

IT 198291-05-3P 204520-88-7P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(assignment of NMR bands to structure of prepared hyperbranched polyphenylenes)

RN 198291-05-3 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-diphenyl-3,4-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 204520-88-7 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,3,5-triphenyl-4-[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



CC 36-2 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 35

IT 3432-73-3P 118688-56-5P, 1,3,5-Tris(phenylethynyl)benzene 198291-05-3P 204520-88-7P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(assignment of NMR bands to structure of prepared hyperbranched polyphenylenes)

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:10932 HCAPLUS Full-text
DOCUMENT NUMBER: 144:109346
TITLE: Method of forming nanoporous polyarylene dielectric films for use in integrated circuit manufacture
INVENTOR(S): Niu, Jason Q.; Hahnfeld, Jerry L.; Lyons, John W.; Sedon, James H.; Silvis, Craig H.
PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006001790	A1	20060105	WO 2004-US18390	20040610
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
EP 1758953	A1	20070307	EP 2004-754861	20040610
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
CN 1968998	A	20070523	CN 2004-80043298	20040610
JP 2008502786	T	20080131	JP 2007-527165	20040610
KR 2007031326	A	20070319	KR 2006-725868	20061208
US 20080090007	A1	20080417	US 2007-660558	20070216
PRIORITY APPLN. INFO.:			WO 2004-US18390 W	20040610

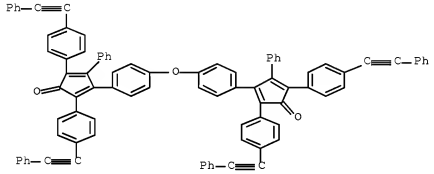
AB The method comprises forming a coating solution containing a matrix precursor material, a porogen material and a solvent, wherein the polyarylene matrix precursor material can be crosslinked to form a matrix with calculated crosslink moiety d. ≥0.003 mol/mL and reacting the polyarylene matrix

precursor material with a porogen which is linear oligomer or polymer formed from monomers containing alkenyl or alkynyl functional monomers and having reactive end groups and weight average mol. weight <5000; applying the coating solution to a substrate and removing the solvent to form a film; and applying energy to the film to crosslinking the matrix precursor and remove the porogens to form pores with average pore size <4 nm.

IT 582323-26-0P 582323-69-1P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation of multifunctional monomers for forming nanoporous polyarylene dielec. films)

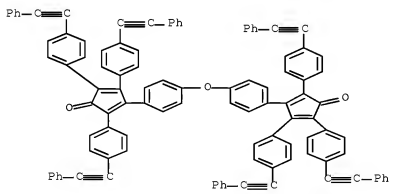
RN 582323-26-0 HCAPLUS

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[4-phenyl-2,5-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 582323-69-1 HCAPLUS

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-tris[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



IC ICM C08J009-26
ICS C08L065-00

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76

IT 582323-26-0P 582323-69-1P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation of multifunctional monomers for forming

nanoporous polyarylene dielec. films)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:409583 HCAPLUS Full-text
DOCUMENT NUMBER: 142:447535
TITLE: Multifunctional monomers containing bound mesogenic porogen forming moieties and polyarylene compositions therefrom
INVENTOR(S): Hefner, Robert E., Jr.
PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA
SOURCE: PCT Int. Appl., 55 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005042613	A1	20050512	WO 2004-US34329	200410 19
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2007509225	T	20070412	JP 2006-536688	200410 19
US 20070027278	A1	20070201	US 2006-575992	200604 17
PRIORITY APPLN. INFO.:			US 2003-513106P P	200310 21
			WO 2004-US34329 W	200410 19

AB A compound (monomer) comprising (i) one or more dienophile groups (A-functional groups), (ii) one or more ring structures comprising two conjugated carbon-to-carbon double bonds and a leaving group L (B-functional groups), and (iii) one or more chemical bound mesogenic poragen forming moieties, is characterized in that the A-functional group is capable of reaction under cycloaddn. reaction conditions with the B-functional group to thereby form a cross-linked, polyphenylene polymer.
IT 851380-14-8P 851380-18-2P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(multifunctional monomers containing bound mesogenic porogen forming moieties and polyarylene compns. therefrom)

RN 851380-14-8 HCAPLUS

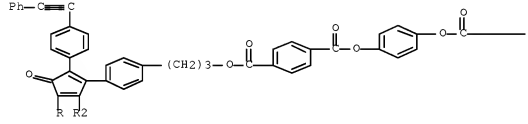
CN Benzenepropanoic acid, 4,4'-[oxybis[4,1-phenylene[4-oxo-3,5-bis[4-(phenylethynyl)phenyl]-2,5-cyclopentadiene-2,1-diyl]]]bis-, bis[2-[(26,27,28-trimethoxy-5,11,17,23-tetrapropylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-25-yl)oxy]ethyl] ester (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

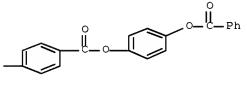
RN 851380-18-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, [4-oxo-3,5-bis[4-(phenylethynyl)phenyl]-2,5-cyclopentadiene-1,2-diyl]bis(4,1-phenylene-3,1-propanediyl) bis[4-[[4-[[4-(benzoyloxy)phenoxy]carbonyl]benzoyl]oxy]phenyl] ester (9CI) (CA INDEX NAME)

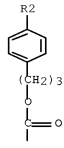
PAGE 1-A



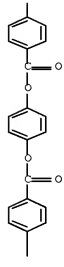
PAGE 1-B



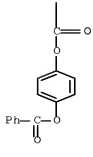
PAGE 2-A



PAGE 3-A



PAGE 4-A



IC ICM C08G061-02
ICS C08G061-10; C08L065-00; C08L065-02; C08J009-26; C07C049-683; C07C049-753
CC 35-2 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 76
IT 37859-24-8P, 4-Bromophenylacetyl Chloride 53831-51-9P 90016-25-4P 851380-08-0P 851380-09-1P 851380-10-4P 851380-11-5P 851380-12-6P 851380-13-7P 851380-14-8P 851380-15-9P 851380-16-0P 851380-17-1P 851380-18-2P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(multifunctional monomers containing bound mesogenic porogen forming moieties and polyarylene compns. therefrom)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:371203 HCAPLUS Full-text
DOCUMENT NUMBER: 142:411828
TITLE: Multifunctional ethynyl substituted monomers and polyarylene compositions
INVENTOR(S): Hefner, Robert E., Jr.
PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA
SOURCE: PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005037761	A2	20050428	WO 2004-US34327	200410 19
WO 2005037761	A3	20050804		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-513107P P 200310 21

OTHER SOURCE(S): MARPAT 142:411828

AB A compound (monomer) comprises (i) ≥1 arylethynyl groups (A-functional groups), (ii) ≥1 ring structures comprising 2 conjugated C-C double bonds and a leaving group L (B-functional groups), and (iii) ≥1 ethynyl groups (C'-functional groups), characterized in that the A- and C'-functional groups are

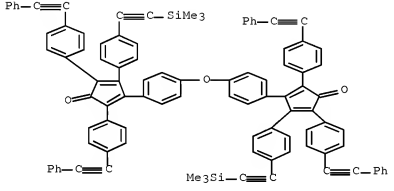
capable of reaction under cycloaddn. reaction conditions with the B-functional groups to form a crosslinked, polyphenylene polymer. The polyphenylenes may have bound porogens which form nanoporous dielec. layers in microelectronic devices. As an example 4,4'-bis[(4-ethynylphenyl)glyoxalyl]phenyl ether was prepared

IT 850401-95-5P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(bis(ethynylation); multifunctional ethynyl cyclopentadienone monomers for Diels-Alder reaction forming polyarylenes)

RN 850401-95-5 HCAPLUS

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,5-bis[4-(phenylethynyl)phenyl]-4-[4-[(trimethylsilyl)ethynyl]phenyl]- (9CI) (CA INDEX NAME)

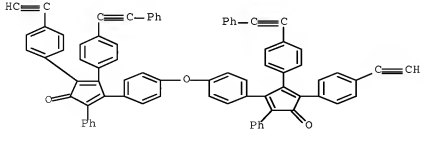


IT 850401-98-8P 850402-00-5P 850402-07-2P
850402-10-7P 850402-13-0P 850402-19-6P
850402-21-0P 850402-23-2P 850402-26-5P
850402-29-8P 850402-32-3P 850402-38-9P

RL: IMF (Industrial manufacture); PREP (Preparation)
(multifunctional ethynyl cyclopentadienone monomers for Diels-Alder reaction forming polyarylenes)

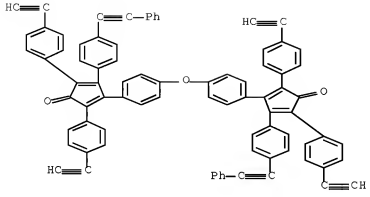
RN 850401-98-8 HCAPLUS

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[5-(4-ethynylphenyl)-2-phenyl-4-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)

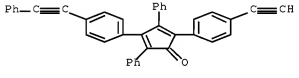


RN 850402-00-5 HCAPLUS

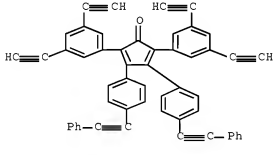
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,5-bis(4-ethynylphenyl)-4-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



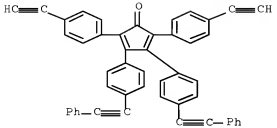
RN 850402-07-2 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2-(4-ethynylphenyl)-3,5-diphenyl-4-[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



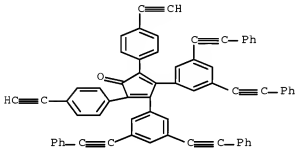
RN 850402-10-7 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-bis(3,5-diethynylphenyl)-3,4-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



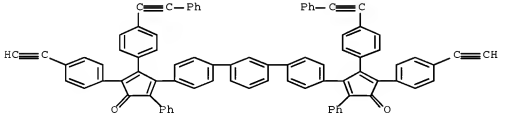
RN 850402-13-0 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-bis(4-ethynylphenyl)-3,4-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



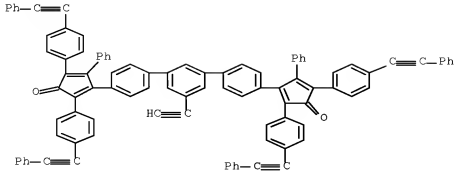
RN 850402-19-6 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,4-bis[3,5-bis(2-phenylethynyl)phenyl]-2,5-bis(4-ethynylphenyl)- (CA INDEX NAME)



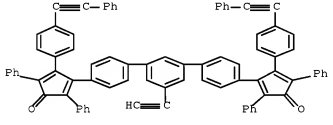
RN 850402-21-0 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-[1,1':3',1''-terphenyl]-4,4''-diylbis[5-(4-ethynylphenyl)-2-phenyl-4-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



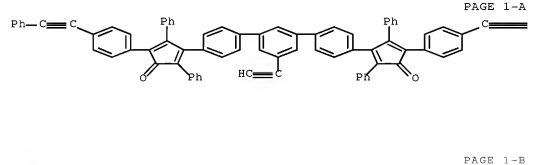
RN 850402-23-2 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(5'-ethynyl[1,1':3',1''-terphenyl]-4,4''-diyl)bis[4-phenyl-2,5-bis[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



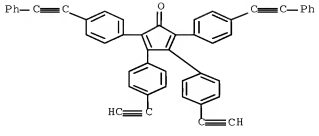
RN 850402-26-5 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(5'-ethynyl[1,1':3',1''-terphenyl]-4,4''-diyl)bis[2,5-diphenyl-4-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



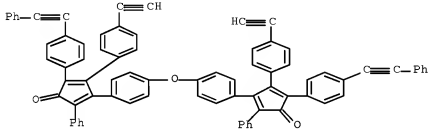
RN 850402-29-8 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(5'-ethynyl[1,1':3',1''-terphenyl]-4,4''-diyl)bis[2,4-diphenyl-5-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)



RN 850402-32-3 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,4-bis(4-ethynylphenyl)-2,5-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)

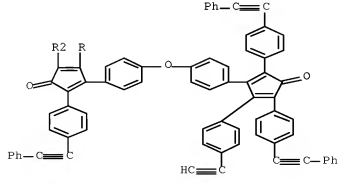


RN 850402-38-9 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[4-(4-ethynylphenyl)-2-phenyl-5-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)

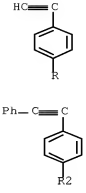


IT 850402-03-8P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and polymerization; multifunctional ethynyl cyclopentadienone monomers for Diels-Alder reaction forming polyaryleneS)
RN 850402-03-8 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[4-(4-ethynylphenyl)-2,5-bis[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM C07C049-00
CC 35-2 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 21, 37, 38
IT 77486-64-7P 850401-95-5P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(bis(ethynylation); multifunctional ethynyl cyclopentadienone monomers for Diels-Alder reaction forming polyarylenes)
IT 850401-96-8P 850402-00-5P 850402-07-2P
850402-10-7P 850402-13-0P 850402-16-3P
850402-19-6P 850402-21-0P 850402-23-2P
850402-26-5P 850402-29-8P 850402-32-3P
850402-35-6P 850402-38-9P
RL: IMF (Industrial manufacture); PREP (Preparation)
(multifunctional ethynyl cyclopentadienone monomers for Diels-Alder reaction forming polyarylenes)
IT 850402-03-8P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and polymerization; multifunctional ethynyl cyclopentadienone monomers for Diels-Alder reaction forming polyarylenes)

L26 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:878433 HCAPLUS Full-text
DOCUMENT NUMBER: 141:366873
TITLE: Multifunctional substituted monomers and polyarylene compositions therefrom
INVENTOR(S): Hahnfeld, Jerry L.; Hefner, Robert E., Jr.; Li, Yongfu; Niu, Q. Jason
PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA
SOURCE: PCT Int. Appl., 43 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004090018	A1	20041021	WO 2004-US9972	

200404
01

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

JP 2006525413 T 20061109 JP 2006-509557
200404
01

US 20070027280 A1 20070201 US 2006-549381
200606
30

PRIORITY APPLN. INFO.: US 2003-459732P P
200304
02

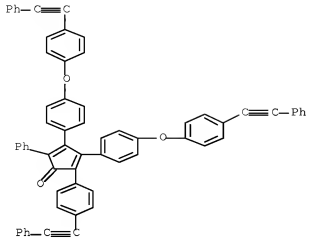
WO 2004-US9972 W
200404
01

AB The invention relates to a compound useful in the formation of polymeric dielec. films for semiconductor devices and the resulting cured films and devices, where the compound comprises (i) ≥3 dienophile groups (A-functional groups) and (ii) a single ring structure comprising 2 conjugated carbon-to-carbon double bonds and a leaving group L (collectively referred to as a B-functional group), and is characterized in that one A-functional group of one mol. of the compound is capable of reaction under cycloaddn. reaction conditions with the B-functional group of a second mol. and elimination of the leaving group L, to thereby form a polymer. An example of the monomers is 2,3,4-tri(4-phenylethynylphenyl)-5-phenyl- 2,4-cyclopentadienone.

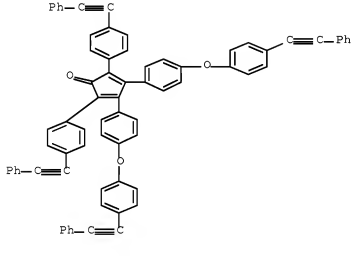
IT 777891-32-4P 777891-34-6P 777891-36-8P
777891-38-0P 777891-40-4P 777891-42-6P
777891-47-1P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomers; manufacture of multifunctional substituted monomers for polyarylene compns. with low dielec. constant)

RN 777891-32-4 HCAPLUS

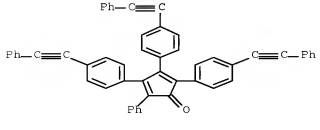
CN 2,4-Cyclopentadien-1-one, 2-phenyl-3,4-bis[4-[4-(2-phenylethynyl)phenoxy]phenyl]-5-[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



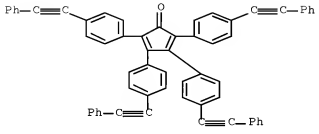
RN 777891-34-6 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,4-bis[4-[4-(2-phenylethynyl)phenoxy]phenyl]-2,5-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 777891-36-8 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2-phenyl-3,4,5-tris[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)

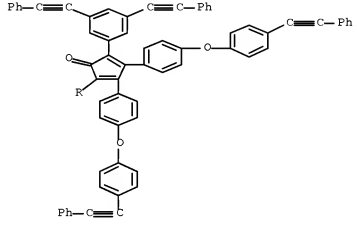


RN 777891-38-0 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,3,4,5-tetrakis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)

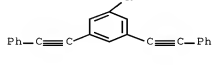


RN 777891-40-4 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-bis[3,5-bis(2-phenylethynyl)phenyl]-3,4-bis[4-[4-(2-phenylethynyl)phenoxy]phenyl]- (CA INDEX NAME)

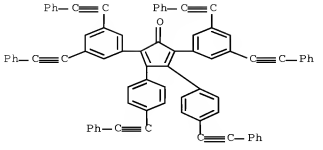
PAGE 1-A



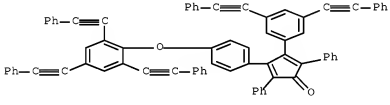
PAGE 2-A



RN 777891-42-6 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-bis[3,5-bis(2-phenylethynyl)phenyl]-3,4-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 777891-47-1 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3-[3,5-bis(2-phenylethynyl)phenyl]-2,5-diphenyl-4-[4-[2,4,6-tris(2-phenylethynyl)phenoxy]phenyl]- (CA INDEX NAME)



IC ICM C08G075-02
ICS C08L065-00; C08L081-00; C08J003-24; C08J009-26
CC 37-2 (Plastics Manufacture and Processing)
Section cross-reference(s): 38, 76
IT 777891-32-4P 777891-34-6P 777891-36-8P
777891-38-0P 777891-40-4P 777891-42-6P
777891-47-1P 777891-56-2P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomers; manufacture of multifunctional substituted monomers for polyarylene compns. with low dielec. constant)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 8 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:878356 HCAPLUS Full-text
DOCUMENT NUMBER: 141:350823
TITLE: Multifunctional unsymmetrically substituted monomers, and polyarylene compositions containing a porogen, and film articles
INVENTOR(S): Godschalx, James P.; Hefner, Robert E., Jr.; Niu, Jason Q.; Silvis, H. Craig
PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA
SOURCE: PCT Int. Appl., 31 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

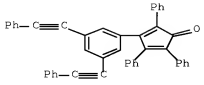
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004089862	A2	20041021	WO 2004-US9973	200404 01
WO 2004089862	A3	20041125		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2007521251	T	20070802	JP 2006-509558	200404 01
US 20060267000	A1	20061130	US 2006-549382	200607 17
US 7381850	B2	20080603		
PRIORITY APPLN. INFO.:			US 2003-459731P	P 200304 02
			WO 2004-US9973	W 200404 01

AB A monomer suitable for use in forming low dielec. constant films for semiconductor devices comprises (i) 2 dienophile groups (A-functional groups) attached to a single aromatic ring and (ii) a second ring structure comprising 2 conjugated C-C double bonds and a leaving group L (B-functional group), characterized in that the single aromatic ring is directly covalently attached to one of the double bonded C atoms of the B functional group or to a fused aromatic ring containing 2 such double bonded C atoms of the B-functional group, and one A-functional group of a monomer is capable of reaction under cycloaddn. reaction conditions with the B-functional group of a second monomer to form a polymer.

IT 776324-97-1P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and B-staging; aromatic substituted acetylene, oligomers and B-staged polymers containing porogen for porous dielec. films of low dielec. constant)

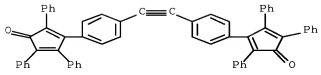
RN 776324-97-1 HCAPLUS

CN 2,4-Cyclopentadien-1-one, 3-[3,5-bis(2-phenylethynyl)phenyl]-2,4,5-triphenyl- (CA INDEX NAME)



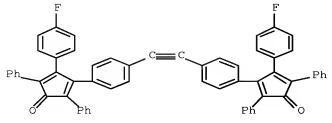
IC ICM C07C049-00
CC 37-2 (Plastics Manufacture and Processing)
Section cross-reference(s): 38
IT 776324-97-1P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and B-staging; aromatic substituted acetylene, oligomers and B-staged polymers containing porogen for porous dielec. films of low dielec. constant)

L26 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:501375 HCAPLUS Full-text
DOCUMENT NUMBER: 135:242600
TITLE: New synthetic approach to the preparation of polyphenyleneethynylenes and polyheteroaryleneethynylenes
AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Belomoina, N. M.
CORPORATE SOURCE: A N Nesmeyanov Institute of Organo-Element Compounds, Russian Academy of Sciences, Moscow, 117813, Russia
SOURCE: High Performance Polymers (2001), 13(2), S153-S168
CODEN: HPPOEX; ISSN: 0954-0083
PUBLISHER: Institute of Physics Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Polyphenyleneethynylenes and polyheteroaryleneethynylenes-polymers with promising electro-optical properties-are usually prepared by the interaction of dihaloarom. and diethynylarom. compds. catalyzed with transition metal (first of all, Pd) derivs. Because of the side reactions these procedures often lead to the formation of relatively low mol. weight polymers; in addition, preparation of organo-soluble polyphenyleneethynylenes and polyheteroaryleneethynylenes seems to be rather problematic. In the framework of the present investigation we have developed a new synthetic approach to the preparation of polyphenyleneethynylenes and polyheteroaryleneethynylenes. This approach is based on the utilization of acetylene-containing monomers (e.g. bis-α-diketones, bis-cyclopentadienones and diacetylenearylenesd) in smoothly-proceeding polymer-forming reactions (the formation of polyphenylquinoxalines and phenylated polyphenylenes). This approach leads to the preparation of high mol. weight polyphenyleneethynylenes and polyphenylquinoxalineethynylenes combining solubility in organic solvents with film-forming properties.
IT 292167-47-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of polyphenyleneethynylenes and polyheteroaryleneethynylenes)
RN 292167-47-6 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(1,2-ethynediyldi-4,1-phenylene)bis[2,4,5-triphenyl- (9CI) (CA INDEX NAME)



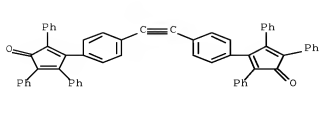
CC 35-5 (Chemistry of Synthetic High Polymers)
IT 21850-32-8P 106877-52-5P 153295-62-6P 260562-19-4P
232167-47-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of polyphenyleneethynylenes and polyheteroaryleneethynylenes)
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:404713 HCAPLUS Full-text
DOCUMENT NUMBER: 135:153176
TITLE: New phenylated: fluoro-containing poly(phenylenes)
AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Khokhlov, A. R.; Keshtova, S. V.; Peregudov, A. S.
CORPORATE SOURCE: Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 117813, Russia
SOURCE: Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (2001), 43(4), 581-587
CODEN: VSSBEE; ISSN: 1023-3091
PUBLISHER: MAIK Nauka
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB New bis(cyclopentadienone) group-containing monomer with Ph and fluorinated Ph substituents, i.e., 4,4'-bis[2,5-diphenyl-3-(p- fluorophenyl)-cyclopentadien-1-on-4-yl]tolane, was synthesized. The interaction of this compound with various diethylnylarylenes according to the Diels-Alder reaction yielded new fluoro-containing phenylated poly(phenylenes) combining good solubility in organic solvents with high thermal characteristics and low dielec. consts.
IT 352461-49-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation and properties of fluoropolymer-polyacetylenes containing Ph and phenylene groups by Diels-Alder polymerization of cyclopentadienone group-containing monomer with diethynylarylenes)
RN 352461-49-5 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(1,2-ethynediyldi-4,1-phenylene)bis[4-(4-fluorophenyl)-2,5-diphenyl- (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36
IT 352461-49-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(monomer; preparation and properties of fluoropolymer-polyacetylenes containing Ph and phenylene groups by Diels-Alder polymerization of cyclopentadienone group-containing monomer with diethynylarylenes)

L26 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:546313 HCAPLUS Full-text
DOCUMENT NUMBER: 133:223129
TITLE: Acetylene-containing phenylated polyphenylenes
AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Belomoina, N. M.
CORPORATE SOURCE: Inst. Elementoorg. Soedinenii im. A. N. Nesmeyanova, Ross. Akad. Nauk, Moscow, 117813, Russia
SOURCE: Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (2000), 42(3), 399-403
CODEN: VSSBEE; ISSN: 1023-3091
PUBLISHER: MAIK Nauka
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB A new monomer, 4,4'-bis(2,3,5-triphenylcyclopentadien-4-yl-1- on)tolane was synthesized by the reaction of 4,4'- bis(phenylglyoxalyl)tolane with a twofold molar amount of 1,3-diphenylacetone in ethanol. New acetylene-containing phenylated polyphenylenes were obtained from this monomer and bis(acetylenes) by the Diels-Alder reaction in trichlorobenzene. Some properties of the resulting polymers and the related films were studied, and it was demonstrated that the synthesized polymers can be crosslinked via triple bonds.
IT 292167-47-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(monomer; synthesis and characterization of acetylene-containing phenylated polyphenylenes)
RN 292167-47-6 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 3,3'-(1,2-ethynediyldi-4,1-phenylene)bis[2,4,5-triphenyl- (9CI) (CA INDEX NAME)

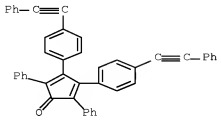


CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36
IT 292167-47-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; synthesis and characterization of acetylene-containing phenylated polyphenylenes)

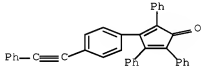
L26 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:468095 HCAPLUS Full-text
DOCUMENT NUMBER: 133:89975
TITLE: Crosslinkable polyphenylene oligomers and polymers useful as dielectric resins in microelectronic fabrication
INVENTOR(S): Godschalx, James P.; Romer, Duane R.; So, Ying Hung; Lysenko, Zenon; Mills, Michael E.; Buske, Gary R.; Townsend, Paul H., III; Smith, Dennis W., Jr.; Martin, Steven J.; Devries, Robert A.
PATENT ASSIGNEE(S): Dow Chemical Co., USA
SOURCE: Jpn. Kokai Tokkyo Koho, 68 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000191752	A	20000711	JP 1998-370438	199812 25
PRIORITY APPLN. INFO.:			JP 1998-370438	199812 25

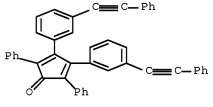
AB The oligomers and polymers are the Diels-Alder reaction products of compds. bearing ≥2 diene functional groups such as cyclopentadienone groups with compds. bearing ≥2 dienophile functional groups such as aromatic acetylene groups where at least 1 of the compds. has 3 of the functional groups. Resin compns. containing the oligomers and polymers have low dielec. constant, good gap fill, planarizing property and resistance to heat and moisture. Thus, heating 3,3'-(1,4-phenylene)bis(2,5-di(4-fluorophenyl)-4-phenylcyclopentadienone) 316 with 1,3-bis(phenylethynyl)benzene 72 and 1,3,5-tris(phenylethynyl)benzene 44 mg in 1,3-diisopropylbenzene at reflux for 42 h gave a viscous product which was spin coated on a wafer and heated at 400° for 1 h to give a film.
IT 198291-05-3P 204520-88-7P 204521-04-0P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; crosslinkable polyphenylene oligomers and polymers useful as dielec. resins in microelectronic fabrication)
RN 198291-05-3 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-diphenyl-3,4-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 204520-88-7 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,3,5-triphenyl-4-[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 204521-04-0 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-diphenyl-3,4-bis[3-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



IC ICM C08G061-10
CC 35-7 (Chemistry of Synthetic High Polymers)
IT 1849-26-9P, 4-(Phenylethynyl)phenol 1849-27-0P, 1,4-Bis(phenylethynyl)benzene 2001-29-8P, 4-Bromodeoxybenzoin 3432-73-3P, 3,3'-(1,4-Phenylene)bis(2,4,5-triphenylcyclopentadienone) 4254-18-6P, 4,4'-Dibromobenzoin 13092-45-0P, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone) 13141-36-1P, 1,3-Bis(phenylethynyl)benzene 21368-80-9P 21454-19-3P, 4,4'-Bis(phenylglyoxaloyl)diphenyl ether 33527-94-5P, 4-Iodophenyl acetate 35578-47-3P, 4,4'-Dibromobenzil 37859-24-8P, 4-Bromophenylacetyl chloride 39229-12-4P, 4-Bromobenzil 51930-25-7P 59745-29-8P, 4,4'-Bis(phenylethynyl)diphenyl ether 70734-74-6P 91960-97-3P, 3,3'-Dibromobenzil 118688-56-5P, 1,3,5-Tris(phenylethynyl)benzene 151041-82-6P 164403-02-5P 198291-05-3P 198291-09-7P 204520-88-7P 204520-96-7P, 4,4'-Bis[4-(phenylethynyl)phenoxy]-2,2',3,3',5,5',6,6'-octafluorobiphenyl 204520-98-9P 204521-00-6P 204521-04-0P 204521-06-2P 204521-07-3P 204521-22-2P 204521-23-3P 204521-24-4P 204521-25-5P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; crosslinkable polyphenylene oligomers and polymers useful as dielec. resins in microelectronic fabrication)

L26 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:655982 HCAPLUS Full-text
DOCUMENT NUMBER: 131:272357
TITLE: Polyphenylene oligomers, uncured polymer or cured polymer, and polyfunctional compound for dielectrics
INVENTOR(S): Godschalx, James P.; Romer, Duane R.; So, Ying Hung; Lysenko, Zenon; Mills, Michael E.; Buske, Gary R.; Townsend, Paul H., III; Smith, Dennis W., Jr.; Martin, Steven J.; Devries, Robert A.
PATENT ASSIGNEE(S): The Dow Chemical Company, USA
SOURCE: U.S., 25 pp., Cont.-in-part of U.S. Ser. No. 711,838, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5965679	A	19991012	US 1997-834677	19970401
WO 9811149	A1	19980319	WO 1997-US15142	19970828
W: IL, JP, KR, NO, SG				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 889920	A1	19990113	EP 1997-939622	19970828
EP 889920	B1	20020213		
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
EP 1170279	A1	20020109	EP 2001-116968	19970828
EP 1170279	B1	20040929		
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
TW 492981	B	20020701	TW 1997-86113027	19970909
TW 243181	B	20051111	TW 2002-91103333	19970909
TW 243182	B	20051111	TW 2002-91103334	19970909
TW 247757	B	20060121	TW 2002-91103332	19970909
NO 9805617	A	19981201	NO 1998-5617	19981202

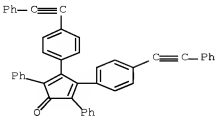
				01
KR 2000047306	A	20000725	KR 1998-64107	199812 30
US 6288188	B1	20010911	US 1999-281838	199903 31
HK 1019341	A1	20030110	HK 1999-102970	199907 12
HK 1045147	A1	20050520	HK 2002-105046	199907 12
PRIORITY APPLN. INFO.:			US 1996-711838 B2	199609 10
			US 1997-834677 A	199704 01
			EP 1997-939622 A3	199708 28
			WO 1997-US15142 W	199708 28
			HK 1999-102970 A	199907 12

AB An oligomer, uncured polymer or cured polymer comprises the reaction product of ≥1 polyfunctional compds. containing ≥2 cyclopentadienone groups and ≥1 polyfunctional compound containing ≥2 aromatic acetylene groups where at least some of the polyfunctional compds. contain ≥3 reactive groups. Thus, 3,3'-(oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone) 100, and 1,3,5-tris(phenylethynyl)benzene 48.3 g were heated 200° in N-methylpyrrolidone for 8.5 h, spin-coated on a wafer, heated at 325° for 90 s, and cured at 450° for 2 min. under N.

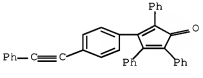
IT 198291-05-3P 204520-88-7P 204521-04-0P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyphenylene oligomers, uncured polymer or cured polymer for heat stable dielecs. for integrated circuit)

RN 198291-05-3 HCAPLUS

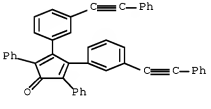
CN 2,4-Cyclopentadien-1-one, 2,5-diphenyl-3,4-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 204520-88-7 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,3,5-triphenyl-4-[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 204521-04-0 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-diphenyl-3,4-bis[3-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



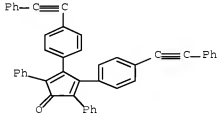
IC ICM C08F038-00
INCL 526281000
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 76
IT 615-54-3P, 1,2,4-Tribromobenzene 1849-26-9P, 4-(Phenylethynyl)phenol 1849-27-0P 2001-29-8P, 4-Bromodeoxybenzoin 3432-73-3P 4254-18-6P, 4,4'-Dibromobenzoin 13092-45-0P 13141-36-1P 21368-80-9P 21454-19-3P 24253-43-8P 33527-94-5P, 4-Iodophenyl acetate 35578-47-3P, 4,4'-Dibromobenzil 37859-24-8P, 4-Bromophenylacetyl chloride 39229-12-4P, 4-Bromobenzil 51930-25-7P 59745-29-8P 65622-33-5P, 1,3-Bis(4-fluorophenyl)-2-propanone 70734-74-6P 91960-97-3P, 3,3'-Dibromobenzil 118688-56-5P 151041-82-6P 164403-02-5P 198291-05-3P 198291-09-7P 204520-88-7P 204520-96-7P 204520-98-9P 204521-00-6P 204521-04-0P 204521-06-2P 204521-07-3P 204521-22-2P 204521-23-3P 204521-24-4P 204521-25-5P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyphenylene oligomers, uncured polymer or cured polymer for

heat stable dielecs. for integrated circuit)
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 14 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:514220 HCAPLUS Full-text
DOCUMENT NUMBER: 131:272293
TITLE: 2,5-diphenyl-3,4-bis[p-(phenylethynyl)phenyl]cyclopentadienone and product of its Diels-Alder homocondensation
AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Shchegolikhin, A. N.; Petrovskii, P. V.; Belomoina, N. M.; Keshtova, S. V.; Timofeeva, G. I.; Ronova, I. A.; Mullen, K.; Morgenroth, F.
CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 117813, Russia
SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (1999), 48(5), 944-948
CODEN: RCBUEY; ISSN: 1066-5285
PUBLISHER: Consultants Bureau
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new monomer of the ABA type, 2,5-diphenyl-3,4-bis[p-(phenylethynyl)phenyl]cyclopentadienone, was synthesized. The Diels-Alder homocondensation of the monomer resulted in a highly branched polyphenylene (Mw = 160000), readily soluble in organic solvents. The polymer obtained is thermally stable up to 600°C (in argon atmospheric) and has a glass transition of 280°C. The structure of the monomer and polymer was confirmed by 1H NMR, 13C NMR, IR Fourier, and Raman Fourier spectroscopy.

IT 198291-05-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of 2,5-diphenyl-3,4-bis[p-(phenylethynyl)phenyl]cyclopentadienone and product of its Diels-Alder homocondensation)
RN 198291-05-3 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-diphenyl-3,4-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



CC 35-7 (Chemistry of Synthetic High Polymers)
IT 198291-05-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of 2,5-diphenyl-3,4-bis[p-

(phenylethynyl)phenyl]cyclopentadienone and product of its Diels-Alder homocondensation)
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:183953 HCAPLUS Full-text
DOCUMENT NUMBER: 128:230849
ORIGINAL REFERENCE NO.: 128:45729a,45732a
TITLE: Polyphenylene oligomers, uncured polymers, and cured polymers, polyfunctional compounds, and integrated circuit articles using dielectrics therefrom
INVENTOR(S): Godschalx, James P.; Romer, Duane R.; So, Ying Hung; Lysenko, Zenon; Mills, Michael E.; Buske, Gary R.; Townsend, Paul H., III; Smith, Dennis W., Jr.; Martin, Steven J.; Devries, Robert A.
PATENT ASSIGNEE(S): Dow Chemical Co., USA
SOURCE: PCT Int. Appl., 52 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

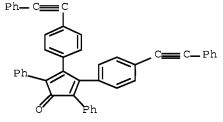
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9811149	A1	19980319	WO 1997-US15142	19970828
W: IL, JP, KR, NO, SG RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5965679	A	19991012	US 1997-834677	19970401
EP 889920	A1	19990113	EP 1997-939622	19970828
EP 889920	B1	20020213		
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
NO 9805617	A	19981201	NO 1998-5617	19981201
HK 1019341	A1	20030110	HK 1999-102970	19990712

PRIORITY APPLN. INFO.:		
US 1996-711838	A	19960910
US 1997-834677	A	19970401
WO 1997-US15142	W	19970828

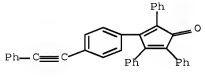
AB An oligomer, uncured polymer or cured polymer comprising the reaction product of one or more polyfunctional compds. containing two or more cyclopentadienone groups and at least one polyfunctional compound containing two or more aromatic acetylene groups wherein at least some of the polyfunctional compds. contain three or more reactive groups. 3,3'-1,4-Phenylenebis[2,5-bis(4-fluorophenyl)-4- phenylcyclopentadienone] 316, 1,3-bis(phenylethynyl)benzene 72, and 1,3,5-tris(phenylethynyl)benzene 44 mg were heated under reflux in 1,3-diisopropylbenzene for 42 h, spin-coated on a wafer, and cured at 400° for 1 h.

IT 198291-05-3P 204520-88-7P 204521-04-0P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyphenylene oligomers, uncured polymers, and cured polymers, polyfunctional compds., and integrated circuit articles using dielecs. therefrom)

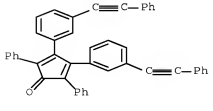
RN 198291-05-3 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-diphenyl-3,4-bis[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 204520-88-7 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,3,5-triphenyl-4-[4-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



RN 204521-04-0 HCAPLUS
CN 2,4-Cyclopentadien-1-one, 2,5-diphenyl-3,4-bis[3-(2-phenylethynyl)phenyl]- (CA INDEX NAME)



IC ICM C08G061-10
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 76
IT 615-54-3P, 1,2,4-Tribromobenzene 1849-26-9P, 4-(Phenylethynyl)phenol 1849-27-0P 2001-29-8P, 4-Bromodeoxybenzoin 3432-73-3P 4254-18-6P, 4,4'-Dibromobenzoin 13092-45-0P 13141-36-1P 21368-80-9P 21454-19-3P 24253-43-8P 33527-94-5P, 4-Iodophenyl acetate 35578-47-3P, 4,4'-Dibromobenzil 37859-24-8P, 4-Bromophenylacetyl chloride 39229-12-4P, 4-Bromobenzil 51930-25-7P 65622-33-5P, 1,3-Bis(4-fluorophenyl)-2-propanone 70734-74-6P 91960-97-3P, 3,3'-Dibromobenzil 118688-56-5P 151041-82-6P 164403-02-5P 198291-05-3P 198291-09-7P 204520-88-7P 204520-96-7P 204520-98-9P 204521-00-6P 204521-04-0P 204521-06-2P 204521-07-3P 204521-22-2P 204521-23-3P 204521-24-4P 204521-25-5P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyphenylene oligomers, uncured polymers, and cured polymers, polyfunctional compds., and integrated circuit articles using dielecs. therefrom)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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